



**Department of
Environmental Protection
Bureau of Land & Water Quality May.2001**

O&M Newsletter

A monthly newsletter for wastewater discharge licensees, treatment facility operators and associated persons

Spring Certification Exam Notice

The spring exams were held on Wednesday, May 16 in the usual locations. It usually takes 4-6 weeks for us to get the answer sheets to ABC and get the scores back. We then have to review the scores and print up the letters and new certificates for the operators who get passing grades. Thus, the results probably won't be available until the end of June. Please don't call two weeks after the exam for your results. We won't know and there's not much we can do about it. As soon as we get the scores back from ABC, we'll get the results out to you. Please be patient.

For Practice

1. Which type of pump should not be used for pumping solids with a concentration of more than 5%?
 - a. Plunger pump
 - b. Centrifugal pump
 - c. Diaphragm pump
 - d. Progressive Cavity Pump
2. To increase the MCRT and MLSS concentration in an extended aeration treatment plant, the operator should:
 - a. increase the wasting rate.
 - b. decrease the wasting rate.
 - c. increase the wasting rate and decrease the RAS rate.
 - d. decrease the wasting rate and increase the RAS rate.

3. The most important class of organisms in a biological wastewater treatment facility are

- a. Fungi
- b. Bacteria
- c. Protozoa
- d. Metazoa

4. A sludge press had a plate surface area of 120 square feet. The sludge concentration is 2.2% solids. A total of 800 gallons of sludge is processed in a 2-hour filter run. It takes 30 minutes to discharge the filter cake and get the filter ready for another run. What is the solids loading on the filter?

- a. 0.38 lb/sq.ft./hr
- b. 0.61 lb/sq.ft./hr
- c. 0.94 lb/sq.ft./hr
- d. 1.19 lb/sq.ft./hr

Dick Darling

UPCOMING TRAINING COURSES

May 1, 2001 in Augusta – Energy Savings at the WWTP - sponsored by JETCC, (207) 767-2649 - Approved for 6 hours.

May 1, 2001 in Presque Isle, ME – Wastewater Operator Certification Review – Class I/II - sponsored by MRWA, (207) 729-6569 - Approved for 6 hours.

May 17, 2001 in Waterville - Biosolids - sponsored by JETCC, (207) 767-2649 - Approved for 6 hours.

May 10, 2001 in Presque Isle, ME – Wastewater Operator Certification Review – Class III/IV - sponsored by MRWA, (207) 729-6569 - Approved for 6 hours.

May 16, 2001 in Augusta - Hydro Cad - sponsored by JETCC, (207) 767-2649 - Approved for 6 hours.

May 23, 2001 in Augusta, ME – Optimizing Compost Operations in Maine - sponsored by MRWA, (207) 729-6569 - Approved for 3.5 hours.

Answers to *For Practice*:

1. b – Centrifugal pumps may cavitate when trying to pump liquids with a high solids concentration. Positive displacement pumps should be used to pump sludge with high solids content.
2. b - Decreasing the wasting rate will allow more sludge to build up in the system. This will increase the MLSS and the MCRT. Changing the RAS rates will have no long-term effect on either the MCRT or MLSS.
3. b - Almost all of removal of organic matter in a biological treatment plant is done by bacteria. Protozoa and metazoa are good indicators of the age and health of the mixed liquor, but they provide little treatment. Fungi are present only under very adverse conditions that should be avoided.
4. b - The sludge applied to the filter in each run is: $0.022 \times 800 \text{ gallons} \times 8.34 \text{ pounds/gallon} = 146.78 \text{ lb/run}$
The loading on the filter is $146.78 \text{ lb/run} \div 120 \text{ sq.ft.} = 1.22 \text{ lb/sq.ft./run}$. Each run is 2

hours long so the loading on the filter = $1.22 \text{ lb/sq.ft./run} \div 2 \text{ hr/run} = 0.61 \text{ lb/sq.ft./hr}$

FREE MONEY

Now that got your attention. Free money, well not really - but almost, so keep reading.

DEP is working hard to get mercury out of all of our lives. We have heard that wastewater treatment facilities may have some meters/bubblers that contain mercury, maybe in significant quantities. We want to know. Now, some of you will think, 'I'm not going to tell DEP anything because then they will make me do something that's going to cost me money.' The answer to that is NO. Here's what we want to do.

First we need to know the extent of the problem, i.e. how many types of meters are out there that might have mercury and a guess of how much mercury might be in them. Second important bit of info - how many mercury containing meters/bubblers are in Maine wastewater treatment plants. Finally, we need to figure out replacement costs.

Here's the **FREE MONEY** part. We are thinking about paying to have the mercury disposed of. Once we get a handle on the amount of mercury and potential number of meters/bubblers, we can calculate mercury disposal costs. Also, if there aren't very many of these meters/bubblers, we may pay for a new, non-mercury replacement part. We have a limited amount of money (like everyone else) and we won't know if we can pay for the disposal and replacements until we know how much mercury is out there and what the replacement costs are.

Now your wondering what if you tell DEP you've got a mercury-containing piece of

equipment, and DEP decides not to pay for anything. Will we make you pay for the disposal and a replacement? NO! If the equipment is still functioning fine, then you can keep using it. If it is broken or really old, let's talk. We'll find a solution that is satisfactory for you. Hopefully there are not too many broken ones out there!

In a nutshell, we want to work with you. We think we can help, but we are not going to dictate anything. So, on the back page of this newsletter is a very short survey. Please fill it out and send it back to us by **June 5th.** Once we know what we are up against in terms of costs, we will let you know what we can do to help you get the mercury out of your facility. If you have questions please give Ann Pistell a call at 287-7703 or toll free at 1-800-452-1942. Thanks for your help!

Ann Pistell

Free Money Survey

1. Do you think you have mercury-containing equipment in your facility?

_____ yes _____ no _____ don't know

2. If yes, what is the equipment (be as specific as you can), how many do you have, and approximately how much mercury do you think it might contain?

Equipment	Number	Amount of mercury (<1 lb., >1lb.)
-----------	--------	--------------------------------------

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. Facility name _____

Facility town _____

Contact Person _____ Phone _____

Please mail this in even if you don't think you have any mercury containing equipment. That way we will be more confident about the amount that is reported to be out there. Our deadline is June 5th.

Mail to: Me. DEP
 Attn: Ann Pistell
 17 State House Station
 Augusta, ME 04333

!Thanks!